

**AMENDMENTS TO THE DRAWINGS**

Please amend the figures as shown in the enclosed replacement sheets. The attached sheets of drawings include changes to Figures 15, 19, and 28. Specifically, Figures 15, 19, and 28 are amended to include text accompanying the reference numbers. The included text specifies the claimed features of the invention. No new matter is added by way of these amendments.

**REMARKS**

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application and for courtesies extended during the Examiner Interview conducted on October 10, 2007.

**Disposition of Claims**

Claims 60-69 are currently pending in this application. Claim 60 is independent. The remaining claims depend, directly or indirectly, from claim 60.

**Drawings**

The drawings are objected to by the Examiner for failing to show each and every feature of the claimed invention. Specifically, the Examiner points out that the phrases "integral case body" and "second case body" are not shown in the drawings. The amended claims no longer recite an "integral case body." Rather, the amended claims recite "an elongate metallic first electrode body," "an elongate metallic second electrode body," and "an elongate dielectric first case body." Each of the aforementioned claimed features are shown in amended Figures 15, 19, and 28. Further, no new matter is added by way of the text included in the amended drawings. Support for the included text may be found, for example, in the original claims, and throughout the specification, including in the specification as amended by this reply. Accordingly, withdrawal of this objection is respectfully requested.

**Objection to the Specification**

The specification is objected to as failing to provide proper antecedent basis for the claimed features, for the same reasons indicated above in the drawing objections made by the Examiner. As discussed with the Examiner during the Examiner Interview of October 10, 2007,

the specification is amended by this reply to include parenthetical references to the claimed features of the invention. Specifically, paragraphs [0209], [0218], [0219], [0253], and [0262] of the Published application (US Publication No. 2005/0016457) are amended to include claimed features of the invention. For example, the case main body is equated with the dielectric first case body recited in the claims. Therefore, Applicant has amended the specification to include at least one parenthetical reference with respect to case main body that recites "dielectric first case body." Similar parenthetical references are included for other claimed features, such as the first electrode body, the second electrode body and the gas passage.

No new matter is added by way of the amendments made to the specification. Support for these amendments may be found, for example, in the original claims and original Figures 15, 19, and 28. By way of illustration, the recitation of the "gas passage" in amended paragraph [0208] and [0262] is supported in original claims 67-69, paragraphs [0012]-[0015] of the Published Application, and in Figure 28, which recites "processing gas." In addition, paragraph [0218] is amended to recite that the case main body 57a is open with a U-shaped cross section to a rear surface. Such amendments specifically reciting the shape of components of the invention and/or the direction (i.e., a longitudinal direction) of components of the invention are supported by the corresponding drawings where the shape and/or direction can be plainly observed from the orientation of the case main body in the corresponding drawings.

Accordingly, withdrawal of this objection is respectfully requested.

#### **Amendments to the Claims**

Independent claim 60 is amended to clarify the invention as recited. Further, claim 62 has been amended to depend from independent claim 60 and is no longer independent. No new

matter is added by way of these amendments. Support for these amendments may be found, for example, at least in Figures 15, 19, and 28, the accompanying text of the specification, the original claims of the application, as well as in the specification as amended by this reply.

**Rejection(s) under 35 U.S.C. § 102**

Claims 60-62, 65, 66, and 69 stand rejected under 35 U.S.C. § 102(a, e) as being anticipated by U.S. Publication No. 2003/0129107 ("Denes"). To the extent that this rejection may still apply to the amended claims, this rejection is respectfully traversed.

Amended independent claim 60 specifically recites that the electrode structure comprises "a first electrode body," "a second electrode body," and "a dielectric first case body." These elements extend in a longitudinal direction in parallel (*see* Figures 15, 19, and 28 of the specification). The longitudinal direction in which each of the aforementioned components extend is orthogonal to an arranging direction in which the two electrode bodies are arranged and also orthogonal to a passage direction in which a processing gas is passed between the two electrode bodies. The dielectric first case body is formed a cross-section orthogonal to the longitudinal direction into a U-shape having a first opening, where the first opening is opened toward one of the cruciform directions orthogonal to the longitudinal direction of extension.

Further, the first electrode body is received in the dielectric first case body. An outer first plasma generating surface of the first electrode body is contacted with an inner peripheral surface of the dielectric first case body. An end part of a side of the first opening of the dielectric first case body is protruded in the open direction relative to the first electrode body. The second electrode body is disposed outside of the dielectric first case body without aiming toward the first opening.

Turning to the rejection of the claims, the Examiner admits on page 8 of the Office Action mailed August 8, 2007, that Denes fails to disclose a gas passage as required by amended independent claims 60. In addition, Denes fails to disclose several features of the amended independent claim as follows.

Specifically, with reference to Figures 1 and 3 of Denes, the Examiner asserts that Denes discloses a first electrode body (140), a second electrode body (130) and a dielectric first case body (114, 138). However, Denes fail to disclose that the first electrode body (140) is elongate, as required by the amended independent claims. The dielectric first case body is also not elongate. As a result, the dielectric first case body cannot be formed in a cross-section orthogonal to the longitudinal direction into a U-shape. Rather, in the drawings of Denes, the first electrode body (130) and the dielectric first case body (114, 138) are elongate vertically. However the second electrode body (140) does not extend in the longitudinal direction in parallel with the first electrode body (130). Further, the dielectric first case body (138) is formed a cross section orthogonal to the longitudinal direction not into U-shape but into circle. Furthermore an end part on a side of the top opening of the first case body (138) is not protruded but retracted in the open direction relative to the first electrode body (130).

The examiner asserts that any powered electrode has, as it's property, a surface defined by its geometry that is "plasma generating" per rudimentary electrostatic physical laws as acknowledged by the prior art as represented by Denes in page 11, lines 3-6 in the Office Action mailed 08/08/2007. However, in addition to the first plasma generating surface, amended independent claim 60 recites "an elongate *outer* second plasma generating surface extending in said longitudinal direction and facing said first plasma generating surface in said arranging direction, said electric field being generated between said first and second plasma generating

surfaces". Applicant asserts that Denes fails to disclose "an elongate outer second plasma generating surface" facing the outer surface of the first electrode body (140) in Denes. During the Examiner Interview of October 10, 2007, the Examiner contended that the second electrode body (130 in Denes) also had a second plasma generating surface associated with it, which was equivalent to the second plasma generating surface claimed in the present invention. However, nowhere in Denes does it disclose that the second plasma generating surface of electrode body (130) is an *outer* plasma generating surface, extending in the same *longitudinal direction* that the dielectric first case body extends.

Finally, Denes does not disclose that the second electrode body (130 in Figure 3 of Denes) is disposed *outside* of the first dielectric case body (114 of Denes), as required by amended independent claim 60. Rather, as can clearly be seen from the Figures of Denes, the electrode body of Denes (130) is included within the dielectric case body (114).

In view of the above, it is clear that Denes fails to disclose each and every element of amended independent claim 60. Dependent claims 62, 65, 66, and 69 are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

#### **Rejection(s) under 35 U.S.C. § 103**

Claims 63 and 64 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Denes in view of U.S. Patent No. 5,500,256 ("Watabe"). To the extent that this rejection may still apply to the amended claims, this rejection is respectfully traversed.

As described above, Denes fails to teach or suggest the limitations of amended independent claim 60. Further, Watabe fails to supply that which Denes lacks, as evidenced by the fact that Watabe is relied upon by the Examiner solely for the purpose of teaching that the

dielectric first case body and the dielectric second case body are separately formed and that the dielectric first case body has an opposing surface abutted with said second dielectric case body, where the opposing surface is provided with a reserve to serve as the gas passage.

More specifically, Watabe has two electrode pipes 4a and 4b which are connected with electric powers 40, 41, 42 via pipes 3a, 3b. But these pipes 4a, 4b are spiral and do not extend in a longitudinal direction. The pipes 4a, 4b are electrically isolated by a partition wall 30a. Even assuming *arguendo* that the partition wall 30a is equated with a gas passage, Watabe fails to teach or suggest that the gas passage is formed between said dielectric first case body and said second electrode body, as required by amended independent claim 60.

In view of the above, it is clear that amended independent claim 60 is patentable over Denes and Watabe, whether considered separately or in combination. Further, dependent claims 63 and 64 are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 67 and 68 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Denes in view of U.S. Patent No. 6,137,231 ("Anders"). To the extent that this rejection may still apply to the amended claims, this rejection is respectfully traversed.

As described above, Denes fails to teach or suggest the limitations of amended independent claim 60. Further, Anders fails to supply that which Denes lacks, as evidenced by the fact that Anders is relied upon by the Examiner solely for the purpose of teaching a plate defining the gas passage, where the thickness of the plate varies along the direction of the gas passage, and wherein a distance between the first electrode body and the second electrode body varies along the direction of the gas passage (*see* Office Action mailed August 8, 2007, page 9).

Furthermore, Applicant asserts that Anders does not even teach that which the Examiner asserts. In contrast to the Examiner's assertion, Anders has electrode bodies 164, 162 and insulator 170b. However a thickness of the insulator 170b is *not varied* but constant along the passage direction of Anders. Similarly, a distance between two electrode bodies 164, 162 of Anders is constant along said passage direction rather than varied.

In view of the above, it is clear that amended independent claim 60 is patentable over Denes and Anders, whether considered separately or in combination. Further, dependent claims 67 and 68 are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

### Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 12088/019001).

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Respectfully submitted,

By 

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Attachments (Replacement Sheets for Figures 15, 19, and 28)